NEW - THE SX212 MODEM HAS ARRIVED!

MILE HIGH ATARI
P.O. BOX 24064
DENVER, CO 80224

ATARI CLUB OF DENVER
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NEWSLETTER ED.	TOM IOWA	699-8647

CLUB MEETING

The Atari Club of Denver meeting is held on the first Tuesday of the month at the Aurora Public Library, located at 14949 E. Alameda at 7:00 p.m.

ATARI COMPUTER CLUB OF DENVER is an independent computer club and user group not connected with the Atari Corporation or any other commercial organization. This is a non-profit organization strictly for the support of Atari computer users by Atari computer users. Use of the name ATARI or any other trademark is only for reference to that product.

The MILE HIGH ATARI MAGAZINE is the official newsletter of STARFLEET ATARI USER GROUP and is published monthly in cooperation with the ATARI CLUB OF DENVER. Original material in the MILE HIGH ATARI MAGAZINE may be reprinted, provided that MILE HIGH ATARI MAGAZINE and the author, if known, are given. Material from other clubs may not be reprinted without their permission.

S T I G

The ST INTEREST GROUP meets at the Hampden Library at 9755 E. Girard Ave. at 7:00 p.m. on the third Tuesday of the month. Contact Ed Fason for more information at 371-6614.

ATARI NEWS UPDATE
Reprint from ZMAG71 September 18,1987 From GEnie ST RT

The Atari SX212 modem is currently shipping to Atari dealers in the USA. The first shipment arrived at the Sunnyvale warehouse during this past week. The SX212 is a Hayes-compatible modem which operates at 1200 baud (and also at 0-300 baud).Its Hayes-compatibility extends to the S-registers.The SX212 modem includes both the standard RS232 port and the Atari 8-bit SIO port. However, 8-bit users should be aware that the software to support this modem through the SIO is not yet released -- in the meantime, the modem can still be used through an 850 or equivalent interface. The modem package includes a power supply (identical to the 2600's), a detailed manual, and special offers from the GEnie (General Electric) and BIX (Byte Magazine) online services. To connect the SX212 to an ST or to any other RS232-equipped computer, a full RS232 cable is needed -- a 3-wire cable does not work with smart modems. When the software is ready, Atari will market an add-on package for 8-bit users. This will contain an SIO cable and a disk which includes the modem driver and the SX Express terminal program by Keith Ledbetter. The suggested list price of the SX212 modem is $99.95.

STARFLEET ATARI USER GROUP
CLUB OFFICERS

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NEWSLETTER ED.	DAVE LLOYD	457-0320

CLUB MEETING

The Officers/Directors meeting is held on the Monday preceding each regular meeting at Denny's Restaurant, 3600 Fox St. (north end of 23rd St. viaduct) at 7:00 p.m.

The STARFLEET ATARI USER GROUP meeting is held on the second Friday of the month at the Pomona High School, located at 8101 Pomona Drive, just west of 82nd and Wadsworth at 7:00 p.m.

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A Note Upon My Trip to Florida
By Dr. Daystrom

I went to Orlando, my trip for this year,
And with many others, from far and from near,
I journeyed to Epcot, and what should appear
Beneath Spaceship Earth?
　'Twas the Fuji!
Oh, the name Spaceship Earth is what they've picked to call
That thing built in Epcot, the giant golf ball,
And before it's a fountain, with a sculpture tall,
In a shape I know well:
　'Twas the Fuji!
Now I've owned an Atari for four years or more,
And besides my keyboard, I've seen and I'm sure,
A cute little symbol, (the Fuji, no more)
And smack in Epcot
　'Twas the Fuji!
Three crystalline pillars stood high in the air,
Two crooked, one straight, and compare and compare,
As I might to an ad that I chanced to have there,
No question remained:
　'Twas the Fuji!
I thought "This is certain to be, like as not,
Some deal J.T. has made with Epcot!"
For a lawsuit is certain to be made and fought,
If the word should get out
　'Twas the Fuji!
I toured the whole complex, and it seemed to me,
That Epcot's computers were all N-E-C.
I said "What hypocrites, those men of Disney!"
When there, right in front,
　'Twas the Fuji!
And though I saw many attractions quite starry,

And saw a great deal during my safari
I did not manage to spot one lone Atari,
Though what stood right there
        'Twas the fuji!"
Home, puzzled, fuming, I sit here alone,
And type out this message, and over my phone,
I'll send it to others, and all will intone,
That thing in Epcot:
        'Twas the Fuji!

Tidbit
by Dave LLoyd Ed.

Welcome to TidBit. My normal little nitch in the
newsletter to spread rumors and untruth's, gathered from
a varity of sources.

Newsletter Contest!

What a Contest? Apperently most of you aren't aware
that we are having a newsletter article contest.
Submissions have been sorta light, (shall I say
non-existent). Maybe you didn't receive your newsletter
that month? (Are your dues paid up?). In-case you missed
it, let me review things for you. Starting way back in
June, we received an Atari Pro Joystick, and a 1030 Modem
from the Folks at B+C Micro. Wanting to share our new
found treasures with all members we devised the article
contest. First prize is your choice of the modem with
software, or the Pro Joystick. Second prize is the
unchosen first prize or 10 5.25 disks. Deadline
originally was to be Sept 15th which is Today! so I think
a two month extention is in order. Prizes will be
awarded at the appropriate clubs December meeting. Come
on people, this is your newsletter, all too long (3.5
years) I have supplied the bulk of the information
contained in your newsletter. Yes, YOUR Newsletter. Not
MY NEWSLETTER,YOURS! But are you helping with YOUR
NEWSLETTER ? With help from a select few, and a 60+ %
reprint from other newsletters,Compuserve,Genie etc, we
have survived. Tom Iowa, Jim Frost, Chester Cox, Tommy
Thomas, Tom Oughton, Gary Skinner,Guy McDaniels and a few
others ,(forgive me if I forgot a few, but you know who
you are!) THANKS!!! without you I would have given up
the Quest a-long time ago. But Folks, I'm getting tired.
Tired of depending on too few, for too much, for too
long. This is YOUR NEWSLETTER, and YOUR CLUB. DO
SOMETHING!! PARTICIPATE!! The so few,overworked members
may finally give it up too.Do you want that? Really, how
much time would it take to write up an article or do a
demo at the meetings of your favorite piece of software.
Haven't you taken alot more then you've given? I know I
sure have and most of you know my involment in not only
Starfleet but the BBS (Skyline 303-457-0320...plug
plug...) Expo.. etc. SO HOWS ABOUT IT! Possible FAME and
FORTUNE, seeing your article printed in a monthly MAG,
and the possibility of a new modem, joystick, disks. HOW
CAN YOU RESIST? I'm waiting............ As usual all
Articles can be submitted to any of the clubs officers.
Tom Iowa or me Dave Lloyd, and of course Skyline BBS
(303-457-0320 24 hrs 300/1200 8-bit and St message bases
and downloads).. See...... when you write something you
can throw in those little un-noticed plugs. You'll get
more out of it, if you put alittle back in. TRUST ME....

You may have noticed that our last issue was very
late. This was due to me being on vacation and Tom moving
to a new house. What a trouper, still getting YOUR
Newsletter out under very adverse conditions.Thanks are
certainly in-order.

--ONWARD--

ATARI BUYS RETAIL CHAIN.

In a copyrighted story from Computer and Software News
08/31/87.
   Jack Tramiel and company purchased the 67 store
Federated group based in the
southwestern section of the US.. Cynics agree that this
could mean trouble for
the distribution starved Atari. Many have problems
picturing a comany that
can't get distribution of their products, being successful
in turning around an unprofitable retail system, gaining
additional distribution. IBM, Digital and Xerox are noted
for trying and failing at this adventure. Also noted was
that Federated has never sold Atari products, with main
lines being Zenith and
Kaypro IBM compatables and Large promotions of rival
Commodores Amiga series.
Most all industry analists beleive Atari has a strong
product line, But has
been hurt badly in distribution due to past dealings with
the Tramiel family.
And promise after promise of New products never coming to
market.

MEGA'S ARE SHIPPING.

 (From John Nagy and the Michigan Atari Magazine)
 (With our Thanks.)

BLITTERLESS MEGAS were seen being sold in SWEDEN. Neil
Harris confirmed this and stated that EUROPE continues to
be a money pot for ATARI and thus particularly GERMANY and
the surrounding area gets special attention.At another in
the popular ATARIFEST series,this one at TORONTO August
15th and 16th, ATARI announced that the MEGA was IN FACT
SHIPPING to dealers in CANADA and the US. The first
domestic machines will also be BLITTERLESS, although the
chip is to be sent later (COMPUTER MONTH?? ed.) to all
owners, to be popped into a ready and willing open socket.

8 BIT GEM TYPE INTERFACE.

ALAN REEVE made his mark with some nice Public Domain and
later COMMERCIAL handlers for the now CHEAP ATARI CX85
keypad. Alan also has some other products, and recently
announced a complete development system for 8-Bit ATARI
computers,still under development in his Chicago based
company. Diamond will be a complete programming enviorment
similar in operation to GEM on the ST. Although this has
been tried by a few programmers before (RE: GOS, the
Zobian Rat,etc).Yet no equivalent to the C-64 GEOS has
really arrived. DIAMOND may be the first. Designed to
fully use the expanded memory ATARI(either 130XE or any
upgraded machine), it will include windows and icons,alert

boxes and mouse support addressable from any language or application software. Included are to be DIAMOND WRITE,DIAMOND DRAW,DIAMOND PUBLISH,and a plethora of desk accessories. Release date is a "HAZY" 'Fall 87'.

BEST ELECTRONICS PIRATING?

Herb Parsons in his AUG.87 column for the NORTH TEXAS ATARI COMPUTER TEAM,(NTACT) discussed some distasteful front-row piracy at their ATARIFEST. It seems that BEST Electronics sells a ROM cart for the ST that is "MAGIC SAC" compatable... Dave Small,creator of the MAGIC SAC,(a Macintosh Emulator cart and software), doesn't get a cent of the sales made by BEST of this blatently copied E-Prom, as he stated in a recent issue of CURRENT NOTES magazine. Dave actually spoke at length with the BEST sales rep at the D.C. ATARIFEST. The REP went into great detail about how much money you could save by buying BESTS version instead of the 'too expensive' real MAGIC SAC...little knowing who he was talking to! Lets hope Dave can resolve this problem, and by all means DON'T SUPPORT BEST. Blantent RIP-OFFS like this do no-one any good.

Supra 2400 Modem.

Supra will soon release a new 2400 baud modem. Rumored to be priced at only $189.00. Features will include 100% Hayes compatablity, built in phone number memory,plus most all features found on most 'Smart Modems'. It looks quite a bit like a HAYES 1200 but is about 2/3 the size.

Parrot Modem.

Speaking of modems. Have you been down to Horizon's lately. Our resident Atari Supporter has a new intovative modem from Novation now available. Slightly larger then a pack of cigarettes, this little wonder packs 300/1200 baud capabilitys,full Hayes command set, autodial/answer, a built in speaker,status indicators, and draws it's power directly from the computer. If that isn't enough, it also has the standard DB25 RS232 cable making hook up to the ST a breeze. Phil is negotiating on a model with a DB9 connector for you 8-Bit fans too. This will require an 850 interface,or P+R Connection, but makes a dandy combination. The best part is it sells for $149.95. Just to sweeten the deal Phil will sell you one this month only,for $119.96. Better hurry,their going real fast.

CHEAP SOFTWARE.

American Techna-Vision (TV) better known for their extensive Atari parts inventory has a bundle of Education programs available CHEAP! For $5.00 each or 3 for $12.50 you can enjoy the following programs.

Fractions	Big Match Attack
Musical Pilot	Com-putation
Trivia Trek	Pathfinder
Abuse	Match Racer

For $6.95 you can pick up

Money Tools	Mind Mazes
Fun in Numbers	Fun in Learning
Run for the Money	Word Flyer

American TV also carries a host of other Atari related software, books and hard to find items. Check with them at :

American Techna-Vision
15338 Inverness St.
San Leandro Ca.
94579
Or by phone at 1-800-551-9995

QUESTBUSTERS.

If your into Adventuring theres a new monthly publication called QuestBusters THE ADVENTURER'S JOURNAL.It includes reviews,new releases,new conversions, encoded walk throughs of selected games (with the code furnished so you only need to translate the area,s where you are having problems) a swap colum, interviews, and specials including ways to extend your subscriptions by purchases or being the first to submit reviews or maps. It appears to be worth the $16.00 a year subscription. If you are interested contact : ADDAMS EXPEDITION
PO BOX 525
SOUTHEASTERN,PA 19399

NEW 8-BIT EMULATOR NEWS.

Most of your are aware of Darek Michocka's 8-bit emulator and the problems he has incured with ATARI , finally winning the OK a few months ago. In the upcoming issue of ST LOG his basic emulator will be published. Apparently this is based on the 800's operating system and will not contain the Player/Missile or "R" Handler routines. Darek has promised that all additional development of the emulator by him or other programmers will be released Public Domain. Are you aware that Darek and company also have an Apple][and C-64 emulators running on the ST. Increadable.. As previously reported Steve Jones of Jonesware is diligently working on a cartridge emulator estimated to be running at 70% of normal 8-Bit speed. Not only is this unit Axlon compatable but can utilize the extra memory of the ST. Mr Jones is also rumored to be working on a FRANKLIN (apple) emulator, with thoughts leaning towards a Commodore version also. For Information:

JONESWARE
PO BOX 7037
MECHANICSBURG PA 17055

ATARI CALCULATORS.

Soon you may be seeing a complete line of calculators with the ATARI FUJI EMBLEM. Hartech Ltd. has licensed the name etc, and will be marketing a solar LCD 'credit card' unit, printing models, and larger office type desktop units. Just the thing to put next to your Atari's during a "Heavy" programing session.

Till Next Month   Dave

ATARI CLUB OF DENVER

SEPTEMBER MONTHLY MINUTES
by Tommy E Thomas II

The war brought various new names to Death in

different forms of radiation, man-made viruses, starvation, and mutations. The second Ice Age came again due to the shifting of the Earth's axis and after twenty-seven years of "Nuclear Winter" the sun finally broke through the dense freezing cloud cover. The high winds blew dust clouds across the now blackened wastes of once great cities. The Earth's surface was now a maze of warped glass sculptures and wind blown debris. Seeds, long dormant, began to take root where they could. The sewer systems, choked with post-war debris, now became the shelters of survivors against the 60 below temperatures. Survivors banded together into tribal groups and those that survived were now two generations older. Among these survivors were the mutations that hunted it's prey in the maze of sewer tunnels and those that had adapted to the harsh sub-zero weather above ground.

Down under the city, a fur robed figure raced beneath, through, and around concrete and metal structures, in what is obviously a urgent matter. The heavily built man with a rifle in one hand and a chainsaw strapped to his back, gives the proper signal, to an alert guard outside a heavy wooden doorway, and enters a large well, lit chamber. Others had gathered and were now examining the ancient tomes that were collected from a learning place during the time of WWIII.

"We will begin, as custom dictates, late as usual. Now gather around and let us begin the telling of the secrets of the sacred Fuji", quipping the chief of the Atari tribe. (Chester Cox's grandson.) They gathered around the table where the ancient artifacts of Atari were and bowed to the sacred power source. The kids grouped behind the adults to catch even the smallest peek at any "graphics". Everyone took his or her turn on the bicycle which supplied the electrical power to recharge an ancient battery. New finds in software, which included a Dungeon Disk from Alternate Reality, were discussed and shown by the grandson of Phil Michealson who was wearing a set of armor made entirely from ancient coins.

Most of the meeting consisted of plans for the next meeting, a rehashing of the Expo disaster, and who to blame for the chief's absence during the last meeting. It was decided that an ancient custom of "swap meet" be invoked at the next meeting. The high priestess of the sacred floppies, the granddaughter of Paul Mirci, will be also having an open library night at the next meeting. The grandson of Ed Fason, the "Wizard of Mods", said he would break away from all his tomes of ATASCII magic, long enough to clean disk drives at the next meet at the cost of 15 ancient dollars. (BEST DEAL IN TOWN FOLKS!). The Atari tribe of Denver was contacted by members of two far away tribes in Australia and n. Anyone interested in promoting international tribal trading relations please contact the tribal counsel.

The artifacts of Power Without the Price were carefully stored away against a new disaster. (The next meeting?) Plans were now being made against the winter months. Hunting parties as well as scavenging and salvage teams were assembled and out into the future our children go.
A FUTURE THEY WILL INHERIT FROM US.
STIG MEETING
SEPTEMBER 15, 1987

by
LOUIS MENDOZA

*****The first speaker, Ed Fason, began the meeting by announcing a new third party vendor for hard disk drive hardware. The new entry to this field is I.C.D. and will be selling a controller interface card that you use to build your own system. If you can get a used drive for a good price, this may be the way to go, other wise you would probably save money buying one of the drives on the market today. If you do get a hard drive, be prepared to hear some noise because the hard drive stays on all the time. If there is some interest in see a home built disk drive, leave a message on the Running Board for Ed Fason and he'll bring in the one he has.

The Running Board is there for you to give us input as to what type of hard or software you would like to see, talk about or have demonstrated. Leave a message for Ed or Chris and they will try to get that article or information or find someone who has it. If you don't tell us, the meeting will only have the information we are interested in and you'll have no one to blame but your selves. Help us help you make this your STIG, one you'll always be looking forward to attending.

To continue on hardware, the new 520 ST-FM, now looks like the 1040ST. It has a built in single sided disks drive and the mother board makes it much easier to upgrade to 1meg. The new 520's will have the same problem as the 1040's in that it will be very difficult getting to the joystick ports and it is suggested that you purchase the 8" extensions available at Horizon computers or the 6 foot version available from Ed Fason.

*****The next speaker was Lou Mendoza the STIG librarian, he gave a quick demo of 2 programs in the library. The first demo was of the PD called Dandy, it is a type of maze game in which you try to go from screen to the next with out getting done in by the beasties in your way. The other program was Football, the play on this was very good for a public domain program.

*****Ken Wilson honored us by attending this meeting and offering to giving us the demo we didn't get last week. The first speaker being a forgiving sort, accepted his offer of penance and invited him to proceed. To our surprise, Ken produced not one but two programs and started his demo's.
RINGS OF ZELPHIN by Strategic Simulations: These are the same people who brought out Phantasie I, II, III, and Roadwar. Ken states that this is the first program from SSI that he is disappointed in, the plot seems to be great and the graphics at the beginning are good but it has not tickled his interest enough to continue playing with it. Thus, he states he gives it a qualified thumbs down but could change his mind as he gets deeper into it, later on.
BARBARIAN by Psygnosis: Ken, "Now this is an interesting story, this guy father gets kill by his brother, who of course would be his uncle. The uncle becomes an evil wizard and finally dies but his life force is enclosed in a crystal and the evil is spreading through

out the land and you've got to come back and have a conflict and avenge your fathers death with the sword you have inherited from him. The graphics are excellent. When I first got this game I thought it was one of those game where you are going to get six screen into it and not be able to get any further. That's not true, we've (Ken & Ed) gotten pretty far into it. I now take everything back, this is a great program!!!!" (For those who are playing Barbarian, the running board has been receiving quiet a bit of dialogue from other players, also Ed Fason is one of the more hard core player, so if you need some hints, leave a message on the Running Board.) The remainder of the meeting was taken up with various questions dealing from wiring up a 5 1/4 inch drive to the ST, to the magic sac. If this makes you curious as to what else was going on that night, then you'll just have to come down next month and find out.

BYE

WAR AGAINST PHONE HACKING HEATS UP
BY GREGG PEARLMAN, ANTIC ASSISTANT EDITOR

Computer break-ins are no longer viewed as harmless pranks. For example, unauthorized computer access is a misdemeanor under 502PC of the California Penal Code if you just trespass and browse around -- and if it's your first offense. But: "Any person who maliciously accesses, alters, deletes, damages, destroys or disrupts the operation of any computer system, computer network, computer program or data is guilty of public offense" -- a felony under Section C of that code. Even changing a password to "Gotcha" is a felony if it can be proven that it was a "malicious access." In California, the maximum punishment is state imprisonment, a $10,000 fine and having your equipment confiscated. The penalty depends on who you are, your prior record and the seriousness of the crime. And you don't have to, for instance, breach national security to be guilty of a felony.

Accessing even a simple system for a small company could damage vital data for more than a year's worth of business, especially if that company didn't properly back up its data. There are all kinds of computer crime. Stealing an automated teller machine card and withdrawing money from an account is a computer crime because you're using a computer to get money out of a system. But simply trespassing in a system and not doing any damage is normally a misdemeanor, according to Sgt. John McMullen of the Stanford University Police Services. This kind of crime has become very common. "Every kid with a computer is tempted," he said. Unfortunately, it can take months to complete an investigation. For instance, the so-called "Legion of Doom" case, beginning in September, 1986, took 10 months to solve and involved people in Maryland, New York, Pennsylvania, Oregon and California. If someone breaks into the computers of, for example, California's Pacific Bell, and the break-in is severe, Pacific Bell Security gets warrants issued, and then, with the police, confiscates computers, manuals, telephone lists and directories -- all related equipment. It's common for the computer to be tied up for a few months as evidence. (And by the time Pacific Bell Security does get involved, the evidence is usually overwhelming -- the conviction rate is extremely high.)

"Whenever I'm involved in a case," said McMullen, "I ask the judge for permission to confiscate the equipment. That's one big incentive for hackers not to do this kind of stuff. I haven't had any repeaters, but I know of one case where the guy probably WILL do it again when he gets out. "Usually the shock of what happens to a juvenile's parents -- who bought the equipment and watched it get confiscated -- is enough to make them stop. But we don't really have enough cases to know what the parents do."

ACCESS "It's easy for hackers to find company phone numbers," said Daniel Suthers, Atari user and operations manager at Pacific Bell in Concord, California. "Most large companies have a block of 500 to 1,000 phone numbers set aside for their own use. At least one line will have a modem. "People post messages on hacker/phreaker bases on some BBS's and say 'I don't know who this phone number belongs to, but it's a business, judging by the prefix, and has a 1200-baud tone.' Then it's open season for the hackers and phreakers." Phreakers aren't much different than hackers -- they're just specifically telephone-oriented. In "CompuTalk: Texas-Sized BBS" (Antic, August 1987), sysop Kris Meier discussed phreakers who appear to have called from phone numbers other than the ones they were actually using. A computer isn't needed to do this -- it's usually done with a "blue box." "The blue boxes were used mostly in the late 1960s and early '70s," said McMullen. "They fool the network and let people make free long distance calls -- a tone generator simulates the signalling codes used by long distance operators. The boxes were phased out a couple of years ago, though: they no longer let hackers access AT&T, but Sprint and MCI can be accessed by something similar. However, computer programs are normally used now." To get long-distance phone service, hackers now use one of several programs passed among other hackers (on bulletin boards, for example). They find the local access number for Sprint or MCI and then run the program -- perhaps for a few days. It generates and dials new phone numbers, and the hackers can check to see how many new or free codes they've turned up. They can post the codes on a BBS, and their friends will use them until they get stopped by the long-distance company -- depending on how long it takes the company to realize that these numbers hadn't been issued yet -- or until the customers discover that their numbers have been accessed by someone who isn't "authorized." Bulletin boards can be especially easy prey. "If a hacker knew your BBS program intimately, he could probably figure it out, but that's messy," said Suthers. "If he can find a back door, it's easier. Sysops are notorious for putting in their own back doors because, though they have all the security under the sun on the FRONT doors, they still want to get in without problems. It's just like what happened in the films Tron and Wargames -- which probably taught a whole generation a lot of things." Meier had said in the August, 1987 issue of Antic that someone once called his board COLLECT. Simply put, the caller fooled the operator. McMullen says that's been around for a long time. "It's common in prisons and situations where the phones are restricted." McMullen also said that if the timing is just right, as soon as the modem answers, the phreaker can wait for an operator to say "Will you accept the charges," then say "Yes." The

operator can't tell which end said yes, and if the modem has a long delay before the connect tone, the phreaker can get away with it. It couldn't be done entirely electronically -- the voice contact is needed. "I've never run across people accessing online services such as CompuServe in this way, but I'm sure it happens," said McMullen. "People suddenly get strange charges on their phone bills. "The hackers I've dealt with are very brilliant and good at what they do. Of course, when you do something all day that you're really interested in, you're GOING to be good at it." DOOM McMullen's most recent hacker case at Stanford University dealt with the Legion of Doom, an elite group of hackers who broke into computers -- some containing national defense-related items. "As I understand it, they're supposed to be the top hackers in the nation," McMullen said. "I started investigating the case when it began crossing state lines, getting a bit too big. I contacted the FBI, who said that because of the Secret Service's jurisdiction over credit card and telephone access fraud, they'd taken over computer crime investigations that go across state lines -- actually, anything involving a telephone access code. This case, of course, involved access codes, because the Sprint and AT&T systems were used, and it was the Secret Service, not the FBI, that made the arrests. "I think that the publicity from this case will scare people, and there'll be a lot less hacking for a while. Some hackers are afraid to do anything: they're afraid that the Secret Service is watching them, too." TRACING AT&T, Sprint and MCI now have ANI -- Automatic Number Identification -- as does Pacific Bell. It aids a great deal in detecting hackers. Pacific Bell usually just assists in this type of investigation and identifies the hackers. "It's easy to trace a call if the caller logs in more than once," said Suthers. "The moment they dial in, a message is printed out -- before the phone even answers -- pinpointing where it came from, where it went to, the whole shmeer. "A blue box made it much harder to detect, but if a hacker used it consistently, we could eventually trace it back. So if someone is in California and makes it look as if he'd called from New York, we can trace it across the country one way, and then back across. Generally, though if the call IS billed to a New York number, the caller is actually somewhere like Florida. But we can back-trace the call itself, especially if it's extremely long." But recently someone broke into Pacific Bell "through a fluke of circumstances." Suthers said, "We closed down that whole area, so they can't get back in that way, but if they dial the number again, they're in trouble." If Pacific Bell Security detects a break-in, the area is secured immediately. Sometimes hackers are steered toward a kind of "pseudo-system" that makes them THINK they've broken in -- but in fact they're being monitored and traced. As to how many hackers there are, who knows? There's a lot of misuse and inside work that's never detected or reported. SECURITY Security systems are expensive, but someone with a lot of data and an important system should seriously look into one. Very few hackers are caught, simply because few corporations have good security systems. "Passwords should never be names, places or anything that can be found in a dictionary," said Suthers. "People shouldn't be able to just write a program to send words from their AtariWriter Plus dictionary disk. Normally there should be a letter

here, a few numbers there -- garbage. Thus, if someone writes a program to generate random symbols and keeps calling back until he breaks in, he'll probably be traced. "Some corporations aren't very computer literate and don't worry about things like passwords until they've been hit, which is a shame. But it's all out there in the books. TRICKS OF THE UNIX MASTER (by Russell Sage, published by SAMS Publications, $22.95) is a beautiful book that tells you exactly what to do to avoid break-ins." McMullen said that Stanford is trying to tighten up security by emphasizing the importance of better passwords. "When researchers want to do their work, however, they don't want to mess with passwords and codes," he said. "Universities seem to want to make their systems easier for researchers to use. The more accessible it is, obviously, the less security there is in terms of passwords. It's easier to use your name as a password than some complicated character string. "So any hacker worth his salt can go onto any computer system and pull out an account. Especially with UNIX, it's very easy to access it, entering as the password the first name of the person who has the account. These Legion of Doom hackers used a program that actually found out what the passwords were: it began by just checking the names. They were very successful -- it was just unbelievable." But McMullen feels that security fell way behind the advances made in computers, and several avenues were left open for people to explore. "Often these hackers don't mean to be malicious or destructive," he said, "but I think they really feel triumphant at getting on. Sometimes they do damage without realizing it, just by tramping through the system: shutting down phone lines, programs and accounting systems." However, the strides made in security since then have accounted for arrests, confiscations and convictions all over the country -- but there are still many more who haven't been caught.

Review of ST Writer, Version 2.0
A GEM among Word Processors!

I bought my first Atari 800 for word processing, and the word processor I bought for it was the old Atariwriter cartridge. I never regretted my decision. With its powerful menu commands, speed, versatility, and print preview option, Atariwriter on the 800 was the best until Atariwriter Plus on the 130XE came along. All the old commands were retained, files could be transferred, and I had nearly three times the memory, a spell checker, an alphabetizer, and a word counter! I wrote a thesis and several major research papers with Atariwriter Plus, and had no complaints--I knew I had the best the hardware permitted. Man is not a content animal, however, and I still wanted more--even more memory and 80 columns. I didn't know at the time how wonderful GEM-dos is, or I would have wanted that too. I knew I'd get them all when I bought a 1040ST, but I delayed the purchase for several reasons, one of the most important being that I did not want to lose access to all the papers I had written on the 8-bit machines. Eventually I learned enough to form some hazy idea of modem-based portovers, and I bought the ST. It came with First Word at the time, but I was disappointed from my first encounter. While I liked the multiple windows (useful for bibliographies and footnotes), and the use of

the Mouse for cursor positioning and block delineation, I was annoyed at the program's "jumpiness," and I really missed my old spell checker and word counter. In short, I was worse off. Time passed, until I read about ST Writer 1.50 in last December's STart. I became convinced that this was the way I wanted to go. I already knew all the old formatting and menu commands (although it took me some time to learn their ST equivalents), and I particularly liked the 850-to-ST utility that allowed me to transfer all my 8-bit files to the ST. Also, I liked the 80 column black on white screen the ST and ST Writer had to offer in medium-resolution color. I also admired Dr. Noonan for what he was trying to do, and my admiration grew as revisions 1.70 and 1.75 came out. I still missed my spelling checker, and was interested in other Word processors that offered WYSIWYG and thesauruses, but ST Writer, I felt, would do until I found something better. Now that I've found ST Writer 2.0, I'm not sure that anything better is possible.

I bought Hippo Spell, fast but buggy, and solved my spelling checker problem quite neatly. Although I have heard that Thunder! is wonderful with the programs that support it, I had gotten used to "check the document and re-boot" with Atariwriter Plus, and Hippo Spell is extremely fast (memory, not disk based). For other reasons I also bought Deskcart!, a useful cartridge of programs containing, besides auxiliary DOS, a clock, calculator, address book, card file, "typewriter" utility, print spooler, screen dump, and an adjustable ramdisk. ST Writer would not work with these, except the print spooler, but I was satisfied. I was very excited, however, to hear that Dr. Noonan and Mr. Kegan had finished the GEM version, which I found in the Fall issue of STart, and even more excited to find it uploaded on several of my favorite BBSes. After a twenty-minute download, and some time un-arcing it with ARCX.TTP and Deskcart!'s ramdisk, I decided to give the new program a whirl. The archive downloaded contained the program, the resource file, the complete ST Writer manual (with tutorial), and the programs needed to prepare a printer configuration file. I soon found out, much to my delight, that ST Writer 2.0 can use any XYZZX.DAT file prepared from version 1.50 onwards, so I did not have to go through the mess of creating another. Admittedly, it's not much of a mess, and the printer interface was perfect, but still.

On boot up, as Dr. Noonan said, you get the standard ST Writer/Atariwriter Plus menu very familiar to me and other old 8-bitters. But, upon clicking either mouse button, you get a Message box that informs you "Mouse Now Active," and when you click "Okay" you get a much different Menu. a bar with the drop-down headings "Desk, File, Edit, Options." The drop down menus were very pleasant surprises. The "Options" menu gives you a chance to set type over or insert editing modes, turn the Mouse on or off (if you turn it off you go back to the old menu with the file still intact), adjust the resolution is you are using a monochrome monitor, use the deadkey option to print special characters, or

simply access the alternate character set lurking in every ST. You can also toggle black-on-white to white-on-black. The "Edit" menu allows you to return to the file from the Desk (which is not visible), or to Create a file or to "Global Format." This was a very pleasant surprise for me. I had always found it hard to keep the formatting bar and its commands straight. Clicking on Global Format produces a box that allows you to set, by keyboard and mouse, all the parameters for a file you are about to create. When you click "Create File," the Global format shell creates your formatting bar at the top of the text, where you can check on it continually. Very nice indeed!

The "File" menu makes full use of GEM dos, but it does so in a specially customized way. It allows you to "Load" a file, by clicking on "Load" you get a files box, allowing you to select your file by mouse. This is a mixed bag. You start in the folder from which you booted ST Writer, but you can change to any disk, including a ramdisk, by erasing the disk and folder heading above the box and typing in a new one. You lose something by loading your files this way. The non-GEM ST Writer uses the "DO RUN RUN ST Writer" identification string inserted in saved files to identify which files are ST Writer formatted and which are not. I found this feature useful on the huge double sided double density disks I use to store everything. All the GEM version looks for is the qualifier *.TXT. My old files don't use this, and I do not intend to chain myself to that, even if it does help in sorting. I'd prefer that the GEM version could read the same string that the non-GEM version does. Still, if you want, you can load files the old way and then go to the GEM version of ST Writer. You can also "Save" files already named, without having to re-name them, "Save as...," meaning saving files to other disks or with new names, and "Delete." All such actions are handled by the mouse, with new names specified by the keyboard and click-on message boxes. You can also format disks SS or DS with a formatting shell. I understand that on a Mega ST, ST Writer can use a special rapid-access format the new machines allow, but I couldn't test that. Also, the "File" menu allows you to print the file, to where and how selected in another message box, and you can still "Receive" files from an 8-bit over an 850 interface and a null modem cable. This transfer takes place at 300 baud, for which there is no excuse in a cable-direct transfer. Finally, the File menu allows you to quit to the real desk top, after first asking you via message box if you have saved the file.

I got my most pleasant surprise from the "Desk" menu. Besides the usual "About ST Writer..." copyright notice, there was my Deskcart! accessory bar. Sure enough, my calculator, ram disk control, print spooler controls, typewriter, clock, address book and card file are all accessible from the ST Writer GEM menu desk. The calculator will allow you to go back and forth from it to the text, while remaining on the menu desk. You lose the Card file and address book once you return to the

text, but ST Writer with Deskcart! has more features that word processors costing more than Deskcart! alone. And Deskcart! can be used with other programs (DEGAS Elite, for example). The print spooler from Deskcart! works without any need to be accessed from within ST Writer, so my computer is free almost as soon as I tell it to print. Deskcart, being cartridge-based, does not take up much memory. With a 300K ramdisk, and an 8K print spooler, I still have nearly 300K free for my files. I can also get rid of the ramdisk and double that, but I can't see any reason to.

Once you are in the actual file itself, it is difficult to tell ST Writer 2.0 from the other versions, although there are very definite differences. All the old keyboard cursor commands work exactly the same. The addition is that the mouse works too. By clicking the mouse, the square cursor suddenly turns into an arrow, allowing you to position the cursor at any point on the screen and then clicking back to the text-producing cursor. You can also move up and down the document with the mouse by clicking on either of the two arrows below the Text Mode indicator. Also, although you can return to the menu in either version by hitting ESC, you can also click on the ESC in the "Press ESC to return to menu" message at the bottom of the screen. This returns you to the desk, a nifty little feature. I find mouse cursor placement extremely useful when I'm editing a document, as I can zero in and correct a problem the moment I spot it. Also, the mouse is helpful in designating blocks to be moved or deleted. Although I learned on the old machines, I have grown to like the mouse a great deal, and am grateful that Dr. Noonan and Mr. Kegan have found a way to combine the best of both worlds. One minor bug: the line and column indicator at the bottom of the screen does not acknowledge the cursor's postion until you have again moved it with the keyboard. I found this annoying setting up some tab stops.

Rumour has it that this version of ST Writer 2.0 was released into the Public Domain in order to help Noonan and Kegan with the de-bugging process. Although I would like to help them any way I can, I have only one additional problem to report: when once I tried to save to a protected file, I froze the system and had to coldstart. I haven't been able to do it again, but a word to the wise! I have found nothing wrong with 2.0 that would justify hanging on to 1.5, 1.7, or 1.75. Accordingly, I have consigned them, reverently, to the "Trash Can" of history. As Dr. Noonan has made quite clear, ST Writer 2.0 is not Thunder! compatible, and probably no version ever will be. Both programs use the event_multi routine to achieve their amazing speed, and this precludes compatibility. Still, Hippo Spell or Haba Spell will check a completed ST Writer document, as will the spelling checkers of some other word processors. There are only a few features I could still ask for: the alphabetizer and word counter being the two that spring to mind. If anybody comes up with ST Writer Plus Footnotes, and/or multiple documents, I will

cheerfully nominate them first for the Nobel Prize and then for Sainthood. I am very, very grateful for what I have, however.

In conclusion, Dr. Noonan and Mr. Kegan may have produced the finest word processor currently available for the ST. In conjunction with Deskcart! it becomes as powerful as many famous word processors, and still costs less. While I still am waiting for Wordperfect and Microsoft Write (expected by Christmas), I feel no sense of urgency. Dr. Noonan has done it again--Big Time!

By Dr. Daystrom

LANGUAGES FOR THE ATARI

by Tom Oughton
and
Bob Stafford

INTRODUCTION

When microcomputers were first introduced to the public, programming was done with the switches and lights on the front panel. Soon BASIC was introduced on paper tape and audio cassette. Choosing a language then wasn't an issue. Now we are faced with several completely differant types of languages. Often a language decision is based on very little understanding or experance. Home computer owners are likely to ask questions such as: "Which programming language is best?", "Which language can do the most?", "Do I need more then one language?", "Which language is easiest to learn?", and "Which language is easiest to use?" In the case of most languages there are no simple answers to these questions. Each programming language is designed to fill particular and often differant needs. The designer(s) creating the easiest, most powerful language required to fulfill their need. Most applications done on home computers can be written in any of the languages available. However, The programming becomes easier by choosing the language best fitted to the task at hand.

The TASK ENVIRONMENT - what tasks are needed for this application - is important when choosing a language. Some examples of tasks used in applications performed on ATARI computers include:
    ≭ GRAPHICS
 - Creating drawings and designs to be shown on the computer screen or printed or plotted.
    ≭ ANIMATION
 - Moving shapes, figures or objects on the computer screen.
    ≭ MUSIC
 - Using computer generated sounds to create melodies or sound effects.
    ≭ DATA PROCESSING
 - The manipulation, storage and retrieval of information to and from the computer.

∗ CONTROL

- The use of data, internal or   external to control devices external to the computer system.

An application may include any or all these tasks. A business package will include data processing, but may need graphics to display charts and graphs. A game may need all the tasks but control. Therefore it is important to consider the primary task when choosing the language to write an application in.

Another consideration when deciding on a language is what we will call the PROGRAMMING ENVIRONMENT. Different languages often require the user to approch them differently than other languages, even when the task is the same. The style of a language is designed into it and it is very difficult to use a language in a way that conflicts with its design. The following are examples of programming environments:

∗ INTERACTIVE

- Allowing the user to sit down and "talk to the computer", and receive immediate responses.

∗ MODULAR

- Each task can be written as an individual piece of a program that can be used as a building block in larger programs.

∗ EXTENSIBLE

- Creating new programming commands that become part of the language and in effect, make the language grow.

∗ RECURSIVE

- Allowing users to define a task or concept in terms of itself.

Each language may include to some degree all these cases of programming enviroments. Choosing a language whose environment reflects the way you think will result in easier learning and use. Finally, before choosing a computer language, it is important to consider your purposes in using the computer - the environment in which you will be working. Following are several distinct USER ENVIRONMENTS:

∗ COMPUTER "USER"

- The person who has no desire to learn how computers work, uses only prewritten programs.

∗ COMPUTER LITERACY

- The user wishes to learn how to use and program computers.

∗ PROBLEM SOLVING

- The user is developing logical skills and creative thinking.

∗ COMPUTER SCIENCE

- The user who wants to learn about the design of computers and programming languages.

∗ COMPUTER ENTHUSIAST

- The person who loves to "compute" and who learns everything he or she can about the powers of the machine.

Obviously the "computer user" has no need for any language. While each of the others have needs that can vary form person to person even in the same user environment. In the following installments we will review the languages (as a class not specific products) currently available for the eigth bit ATARI computers. Each review will start with a history of the language's

development and the task it was originally intended for. Then, presenting the language discription which when combined with the strengths and weaknesses will provide the LANGUAGE ENVIRONMENT - a combination of the task, programming and user environments of this language. Suggested applications where each language would flurish are then presented. Lastly a sample program "ORANGES" (slightly modified from the orignal written by Dave Lutz of Eugene Oregon ACE) will be translated into each language. It is hoped that these articles will provide enough information to allow the readers to make better decisions as to when to program in any languages other than BASIC.

65XE-130XE 320K upgrade
By Scott Peterson
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released to the public.

Documentation and kit orientated layout by Mr. Goodprobe As we proceed with this fine endeavor in kit building, I would first like to thank those folk who first inspired this upgrade. There were several users on our board in Ohio that inquired as to the possibility of an upgrade for their Atari 65xe computer. Several folk had indeed said that such a thing was not possible, but I decided to check out this request and see if something could be done. Well, a few calls were made, the right people were contacted, (great job Scott!), and here it is! The reason I am taking the time to mention this is for this reason: The only way we can ever know what you really want in the way of hardware is to ASK! A short time ago we read a fine article here in Zmag that told us of the inner workings of the company called ICD. They disclosed to us that the inspiration for their MIO came from you the user sending them ideas of what you would like to see, and the same is the case with this 65xe upgrade! If there is something else you would like to see, please send those notions to us here at Zmag, and we will genuinely attempt to bring it to pass! Great hardware is derived from sincere questions! I have written the following documentation in such a manner that you can use it to help you keep track of your progress as you assemble this memory enhancement. Simply place a check in the space provided as you proceed. This will allow you to readily follow your progress, and pick back up where you left off if you should have to stop. Once you have finished this upgrade you will then have in your possession an Atari 65XE with 320K of total ram. This is broken down into chunks of 64K of standard ram, and 265K of page mapped ram. This upgrade Scott tells us this is 100% compatible with his previous 130XE/320K upgrade and therefore will run all programs that his earlier enhancement ran. The equipment you will need is:
A: A medium sized Phillips head   screwdriver.
B: A very small jeweler's screwdriver with flat blade.
C: Soldering wick (recommend Chem-Wik .100 inch size), or vacuum   desoldering pump.
D: Soldering station (like Weller   model WTCP), or LOW wattage soldering pencil of the 15-25 watt variety.
E: Small pair of needle-nosed pliers.
F: #30 gauge wire (Jameco #130 BE)
G: Wire stripping tool for #30 gauge

wire ("Clip and Strip" Jameco #CAS-130).
H: Heat shrink tubing or black
   electrical tape (tubing preferred).
I. Small pair of wire snippers.
J: Optional: Small carpet sample or   blanket.
   The parts you will need are:
A: Z1--> 74LS158
B: Z2--> CO25953 (Custom chip by Atari)
C: Z3-Z10--> 256K Ram chips.. #41256-150 (8 required)
D: R1,R2---> 33 ohm 1/4 watt   resistors (2 required)
Next week in Zmag, We will list the instructions for
this hardware upgrade.
PART 2
1.___Place carpet sample or small blanket on a clean,
uncluttered workspace that is well lighted.
2.___Situate all tools and parts on one side of your
workspace.
3.___Get a fresh cup of coffee!
4.___Place 65XE face down on carpet.   Remove all
screws holding cabinet together. Turn unit over. Remove
top of cabinet and lay it in a safe   place.
5.___Gently pull upward with fingertips on mylar
extending from keyboard and remove it from its
connector. Place this keyboard assembly with the top of
the cabinet. Place screws in a small   container so
they wont be   misplaced.
6.___Take needle-nosed pliers and   turn all twist tabs
on metal shield so it may be easily removed. Remove
all screws from outer edges of PC Board and then place
screws in your   container, and the top and bottom
shields along with the bottom of the cabinet should be
placed with the rest of the 65xe cabinet.
7.___Place all ICs in front of you and proceed with
the following:
a.___Bend up pin number 15 on all 8 of the 41256
rams. Then snip off the thin part of the leg so all you
have left of pin 15 is the "stub" or fat portion. Do
this on all 8 rams.
b.___Bend up all pins with the exception of 8 and 16
on the 74LS158. Leave the legs on 8 and 16 long, and
snip the thin part off all other pins on this chip.
c.___Bend up all pins with the exception of 8 and 16
on the CO25953 . Leave the legs on 8 and 16 long, and
snip the thin part off all other pins on this chip.
d.___Take both 33 ohm resistors and snip the leads so
their is 1/4 of an inch of lead left on either end of
each of these resistors.
e.___Place these chips to one side, and position the
65XE motherboard in front of you. Locate IC numbers
U9 through U16. You will find them running along the
left side of the motherboard. Take a piece of tape or
a small black magic marker and place a small mark next
to the IC that is labeled U12. You see the wisdom of
doing so later on in this documentation.
8.___Proceed to piggy-back ICs Z3 thru Z10 inclusive
on top of ICs U8 thru U15 inclusive. Please take your
time and be sure that each chip is facing the same
direction as the integrated circuit below it.   Do a
good job soldering so not only will this upgrade work
well but also will be pleasing to the eyes when you
show it off to your admiring friends!
9.___Cut 7 small pieces of #30 gauge wire, and use
these to connect all 8 of the pin 15s of the piggy-
backed rams.

10.___Gently turn the 65Xe motherboard over exposing
the underside to your trusty soldering iron. Cut 7
more small pieces of #30 gauge wire and then proceed to
jumper all the pin 1s of the rams. Cut another piece of
#30 gauge wire approximately one foot long and   solder
it to pin one also and then run it through a convenient
hole in the motherboard. Turn the motherboard back up
with parts side once again smiling up at you.
11.___Grasp the 74LS158 and proceed to piggy-back it
on top of an IC on the motherboard labeled U24 which
you will find at the front right of your computer. Make
sure it is facing the same direction as the chip you
are placing it on top of and proceed to solder pin 1 of
the 74LS158 to pin one of U24. Next solder pin 16 of
the 74LS158 to pin 16 of U24.
12.___Grasp the CO25953 IC and proceed to piggy-back
this gem on top of U2. U2 can be found approximately
in the dead center of your 65XE motherboard. Again,
please make sure both chips are facing the same
direction. Remember, a slow, sure job is often time
the fastest job overall! Proceed the solder pin 1 of the
CO25953 to pin 1 of U2. Next, solder pin 16 of CO25953
to pin 16 of U2.
13.___Grasp one of those 33 ohm resistors you have
previously trimmed and solder one end to pin 15 of Z3.
Z3 you ask? Why that is the chip which has been piggy-
backed on top of U12. U12---you know that one! Thats the
chip we so wisely marked before we started! Mother
would be so proud of her smart little boy! Ok, forgive
me, its late and I'm getting weird!
14.___Cut a short piece of wire and attach it to the
free end of the resistor you just connected to Z3   pin
15. Run the other end of this wire to the CO25953 pin
10.
15.___Grasp the other 33 ohm resistor and solder it to
the 74LS158 pin 4 (this is one of the ones you have
previously piggy-backed.) Now take the long piece of
wire you had previously connected to all of the pin 1s
of the rams and solder this to the free of your
resistor.
16.___Now take the metal bottom and place the
motherboard back into this protective housing.
17.___At the front of your computer on the lefthand
side you will find R108. Desolder the end of this
resistor closest to the front end of the computer.
Solder a short wire to the new free end of this
resistor, put heat shrink on the connection, and connect
the wire to pin 11 of the CO25953.
18.___Our next chore is to locate U6 which can be
found near the center of the front end of the
motherboard. Please be careful as the traces on this pc
board are very delicate and will not be able to
tolerate much abuse. Gently desolder pins 23 and 24 of
U6. The bst way to do this is take your solder wick,
place it against the leg to be desoldered,and heat it
until you see the solder beginning to flow into the
wick. Turn the motherboard over and make sure all the
solder is off of the pin on this side also. Repeat this
step with pin 24 also. Then take a small, flat-bladed
jeweler's screwdriver and use it to push the pins back
and forth a bit. This will free up the pins and allow
you to remove them easily and not tear the living
daylights out of the board! Turn the motherboard back

with the parts side up, and use that same jeweler's screwdriver to pry pins 23 and 24 of U6 out of the board. Leave them extended in a horizontal direction, snip the thin part of the leg off, thus leaving the fat parts of these 2 legs for you to connect to later.

19.___Cut a small piece of wire, and strip either end. Connect one side of this wire to the land where pin 23 of U6 used to be. Fasten the other end of this wire to C025953 pin 1.

20.___Cut a small piece of wire, and strip either end. Connect one side of this wire to the land where pin 24 of U6 used to be. Fasten the other end of this wire to C025953 pin 2.

21.___Get your second cup of coffee, I am sure by now you need it!

22.___Cut a short piece of wire, strip both ends, and connect one side to the 74LS158 pin 1, and the other side to U17 pin 30.

23.___Cut a short piece of wire, strip both ends, and connect one side to the 74LS158 pin 2, and the other side to U23 pin 15.

24.___Cut another short piece of wire, strip both ends, and connect one side of this wire to the 74LS158 pin 3, and the other end goes to U23 pin 16.

25.___Cut another short piece of wire, strip both ends, and connect one side to the 74LS158 pin 15, and the other end to pin 8 of the same chip.(74LS158)

26.___Cut yet another short piece of wire, strip both ends, and connect end of the wire to C025953 pin 6, and the other end to U6 pin 35.

27.___Cut another short piece of wire, strip both ends once again, and connect one side to C025953 pin 7, and the other end to pin 8 of the same chip. (C025953)

28.___Cut another short piece of wire, strip both ends once again, and connect one side to C025953 pin 9, and the other to U17 pin 26.

29.___Got the feeling you know whats coming? Yup..thats right...connect one end of this wire to C025953 pin 12, and the other side to U6 pin 23.

30.___Cut a short piece of wire, strip both ends, and connect one side to C025953 pin 13, and the other end goes to U6 pin 24.

31.___Cut a short piece of wire, strip both ends, and connect one end to C025953 pin 14, and the other end goes to the same chip pin 16.(C025953)

32.___Cut yet another short piece of wire, strip both ends, and connect one end to C025953 pin 15, and the other end goes to U6 pin 5.

33.___Take heart, we are getting close now! Cut another short piece of wire, connect one end to C025953 pin 3, and the other end goes to U23 pin 12.

34.___Cut another short piece of wire, strip both ends, connect one end to C025953 pin 4, and the other end goes to U23 pin 13.

35.___Cut one final piece of wire (amazing how pleasant the word "final" sounds!), strip both ends, connect one side to C025953 pin 5, and the other end goes to U23 pin 14.

36.___Check all your wiring, and rearrange it to be pleasing to the eye as well as functional.

37___Get your SpartaDos 3.2 that has the RD.COM file on it, say a prayer and load 'er up! If she boots you probably are ok! If not don't panic, simply go back

through section step by step, you will find it is probably some little error or oversight.

38.___While you have your computer open it would be a good idea to solder the joystick jacks, the monitor, I/O and power supply ports also. It may save you a bit of aggravation later on!

39.___Reassemble your upgraded computer by placing the top metal cover back over the motherboard. Turn all twist tabs and then insert the appropriate screws. Gently plug the keyboard back in, position it in its slots in the cabinets, and then place the cabinet top on. Turn over and insert all screws. While you have it out, why not use a bit of Fantastic spray cleaner on it to make it sharp! Good deal! If you don't have SpartaDos, then you are overdue to enjoy probably the fastest and most feature laden of all the Dos family for the Atari 8-bit computer. Run, don't walk to your favorite computer software store and bring home this treasure! For you programming types, here are the control numbers for location 54017 (PORTB).

```
####################################
Bank #              Control # Hex #
####################################
Bank 1
------------------>131----->83 Bank 2
------------------>135----->87 Bank
3 ----------------->139----->8B
Bank 4
------------------>143----->8F Bank 5
------------------>163----->A3 Bank
6 ----------------->167----->A7
Bank 7
------------------>171----->AB Bank 8
------------------>175----->AF Bank
9 ----------------->195----->C3
Bank 10
------------------>199----->C7 Bank
11 ---------------->203----->CB
Bank 12
------------------>207----->CF Bank
13 ---------------->227----->E3
Bank 14
------------------>231----->E7 Bank
15 ---------------->235----->EB
Bank 16
------------------>239----->EF
####################################
```

Scott Peterson recommends using SpartaDos 3.2, but also notes you can also use MYDOS 4.1 or higher, and also Topdos 1.5 and higher with the 320k series of upgrades. If you have any projects/mods/ questions you would like to ask please feel free to send them here to the Zmag bbs, or to the Stairway To Heaven BBs at 216-784-0574 and leave them to Mr. Goodprobe. You can obtain a complete kit of all the parts in this 65XE upgrade for $49.95 from Midtown TV. You can reach these good folk at 216-633-0997 from 9a-7p Eastern time. They also repair all Atari 8 and 16 bit computers and peripherals, and offer flat rate repairs on the 8 bit line. You also can obtain, the wire, strippers and many other goodies from Jameco. Their phone number is 415-592-8097. By the way, did you hear that boomerangs are making a comeback? Think about it and enjoy your 130K 65xe! -Mr. Goodprobe- THIS ARTICLE FROM ZMAG670